

METHOD AND INTEGRATED CIRCUIT CAPABLE OF READING AND WRITING DATA SIMULTANEOUSLY

Abstract of the Disclosure

5 An integrated circuit and a method of reading and writing data at the same time are provided. The integrated circuit has separate input and output ports and a write address and a read address are input during a period of a clock signal. The circuit includes memory blocks that respectively include a plurality of sub memory blocks, cache memory blocks that respectively correspond to the memory blocks memory blocks, and a tag memory control unit. The tag memory control unit controls reading data from and writing data to the memory
10 blocks and the cache memory blocks in response to the write address or the read address. In particular, reads of the data from or writes of the data to the memory block and the cache memory block at the same time are performed if an upper address of the read address and an upper address of the write address are identical to each other. Since data can be separately read from and written to a memory block or a cache memory block at the same time during a
15 period of a clock signal, an operational frequency of the clock signal can be increased.